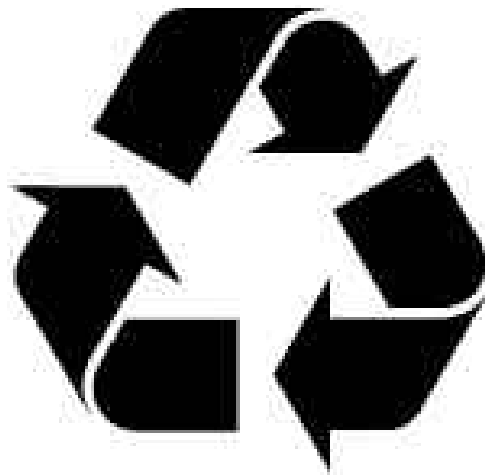




King County

Environmental Purchasing

1999 Annual Report



Environmental Purchasing Program
www.metrokc.gov/procure/green
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King County, Washington

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Environmental Purchasing Program
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1999 Annual Report

September, 1999

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I. King County Environmental Purchasing Program

King County adopted its Recycled Product Procurement Policy (KCC 10.16, Executive Policy CON 7-1-2 – AEP) in 1989. The policy directs County agencies to purchase environmentally preferable products "whenever practicable." This annual report summarizes the achievements of King County agencies from July 1, 1998 through June 30, 1999.

The Policy www.metrokc.gov/procure/green/policy.htm

The King County Environmental Purchasing policy reflects a long-term commitment on the part of the County to the purchase of environmentally preferable materials. In 1998, King County was awarded the first annual **Environmental Purchasing Award** of the **National Association of Counties (NACo)**, which recognized the County as a national leader in municipal procurement of recycled and environmentally preferable materials. In 1999, the **Office of the Federal Environmental Executive** recognized the County and included it as a case-study in its publication entitled "*Recycling, it's Everybody's Business*." King County is maintaining this position of leadership through the efforts and accomplishments of County employees who actively pursue ways to use environmentally preferable materials in new applications and work with vendors to promote the development of viable and economical environmental products. This report represents the progress of agencies toward the goals of the policy.

The County Executive revised and simplified the policy in 1995, following enhancements to Federal guidelines, which require "environmentally preferable" purchasing by Federally-funded agencies and the experience of five years of implementation by King County agencies. These revisions recognized the broader category of environmentally preferable products, streamlined the policy, and clarified accountabilities of agencies. The County's Environmental Purchasing Policy meets the recently adopted Federal requirements of Federal Executive Order 13101, which calls upon agencies that receive any Federal funds to pursue environmental purchasing objectives.

The Program

The Environmental Purchasing Program aims to fundamentally change the procurement priorities of the more than 13,000 employees of King County and its contractors. With the full participation of the people in the agencies who make purchasing decisions, the County can attain its goal of buying recycled and other environmentally preferable products wherever practicable. The program supports the efforts of County personnel by providing information and technical assistance to help them identify economical and effective recycled and environmentally preferable products and creates and maintains contracts for their purchase. The program helps agencies understand policy requirements and communicates specifications, contracts, and other practical information between County agencies, vendors, users, and other jurisdictions.

The program's collaborative approach, which relies on the expertise of County employees to evaluate procurement opportunities and revise procedures, is gradually changing the way agencies view these opportunities. County agencies have responded by developing ways to increase the use of recycled and other environmentally preferable products, especially where these will reduce costs, while still meeting rigorous performance standards.

Implementation

The **Procurement Services Division** of the King County Department of Finance administers the **Environmental Purchasing Program** to help County agencies increase their purchase of environmentally preferable products. The program:

- researches recycled and environmentally preferable products, applications, and vendors and communicates this information to agencies to help them make purchase decisions;
- encourages agencies to evaluate new products, assists in development of specifications and contracts, and disseminates evaluation results;
- maintains a world-wide-web site and produces an e-mail bulletin to provide users with information about the performance, cost, and availability of environmentally preferable and recycled materials, and about policy implementation strategies;
- reviews policy requirements with agencies and monitors the status of policy implementation;
- provides technical support to the outreach programs of the Solid Waste Division, the Department of Natural Resources, and others, to facilitate the implementation of policies favoring recycled and environmentally preferable procurement by suburban cities in King County;
- transmits the annual report of the King County Environmental Purchasing Program to the County Council, County agencies, suburban cities, other jurisdictions, and the larger community, to promote the exchange of information between personnel in County agencies and their counterparts in other organizations;
- coordinates development and implementation of policy models and procurement guidelines and recommends revisions to County policy;
- ensures that contracts issued by the County require recycled and environmentally preferable components wherever practicable and that contractors provide certification of this content and report amounts purchased; and
- assembles and disseminates evaluation results and reports of environmental purchases by agencies and their contractors.

The Challenges

A number of factors challenge efforts to increase environmental purchasing:

- project managers, designers, and contractors are not familiar with the use of many recycled and other environmentally preferable products and are uncertain of the ways in which they might be effectively specified and applied as substitutes for familiar products;

- developers of environmentally preferable products are often in the early stages of identifying the needs of potential customers and establishing the production, marketing, and distribution capacity to meet them;
- the use of a product must be economically responsible. The cost must be competitive, and contractors must have developed the processes and skills needed for its economical use;
- many products must meet rigorous standards maintained by various governmental and industry regulators, and the modification of these standards can be a painstaking, slow, and expensive process;
- standards and specifications are often under development and regulators may not be equipped to deal with new materials effectively; and
- developing and administering data-collection procedures to assemble information from contracts is time-consuming and places unfamiliar demands on participants. Data for purchases taking place within construction and other service contracts and sub-contracts can be difficult and expensive to obtain.

The Opportunities

The Program and County agencies are addressing these challenges by:

- maintaining liaisons between agencies and the Environmental Purchasing Program to facilitate policy implementation and data collection;
- seeking new applications for recycled and other environmental products and encouraging contractors to use them whenever possible;
- evaluating environmental product performance in new applications through testing and pilot programs and sharing the results through the Internet's World-Wide-Web, the email "Environmental Purchasing Bulletin," and by other means with agencies, jurisdictions, and other users;
- assembling detailed application information and performance data from product users and manufacturers and disseminating this to potential users in the County;
- helping agencies develop specifications for environmental products whenever evaluations establish that product performance and cost are acceptable; and
- helping potential suppliers obtain feedback from users to assist them in product development and helping them understand King County procurement processes.

II. Purchases

Paper Purchase Summary

Most printing and office supply paper is purchased through centrally administered term-supply contracts, which enable agencies to purchase hundreds of paper products at low and consistent prices. Recycled paper is specified wherever practicable.

Recycled paper purchases have grown from 8% at the start of policy implementation in 1989 to 96% in 1999, exceeding the 60% goal established in policy. King County agencies purchased recycled paper goods valued at **2.4 million dollars** in 1999.

The table below shows the dollar value and percentage of total recycled paper purchases for 1999 by category.

1998-99 Recycled Paper Purchases		\$	%
Photocopy and Bond Paper		445,435	97
Printing Paper*		1,392,395	97
Paper Products, Miscellaneous		545,481	92
Totals:		2,393,311	96

*Estimated cost of paper only, does not include printing costs

Paper Purchase Detail

King County purchases of paper fall into three general categories:

- **Photocopy and Bond Paper** supplied to County agencies now meets the 1999 requirement of 30% post-consumer recycled content established by Federal Executive Order 13101. County purchases of recycled paper totaled nearly **\$450,000** for the 1999 reporting year, **97%** of total copy paper purchases.
- **Printing** by the County Printshop and through contracts administered by the Procurement Services Division use recycled paper whenever practicable. During 1999, recycled paper purchases reached **97%**, totaling **1.4 million dollars**, including the cost of paper for **9 million** printed bus-schedules. All new printing contracts executed this year required recycled paper.
- **Other Paper Products** purchased include office supplies, such as envelopes, boxes, folders and notepads, and janitorial products, such as paper towels and tissues. **92%** of these met recycled-content standards in 1999, and totaled nearly **\$550,000**.

Non-Paper Purchase Summary

The purchase of non-paper recycled-content products is less straightforward than that of paper products. These products are often not well established in the marketplace and are often purchased through complex engineering and construction contracts. Purchases depend on the specifications of designers, based on project-specific materials requirements; acceptance by State, Federal, and other external standards organizations (e.g. ASTM, AASHTO); product performance, price and availability; and the ability of contractors to deliver the expertise required for their use.

The table below summarizes 1999 recycled non-paper product purchases. These numbers are collected from term supply contracts, direct vouchers, and construction contracts. Term contracts require vendors to report purchases to the Environmental Purchasing Program and the program's liaison network captures data when agencies purchase products by other means. More details about these purchases and how they performed follow in the "Purchase Detail" section.

Commodity Purchases	Per	Units	\$
Aggregate, Recycled Concrete	Ton	994	8,898
Aggregate, Recycled Glass	Ton	300	4,800
Antifreeze, Remanufactured	Gallon	9,340	27,021
Can Liners, Recycled	Case	3,862	51,247
Compost	Yard	1,762	29,050
Glass Sand	Bags	640	2,320
Oil, Re-refined	Gallon	15,284	37,682
Plastic Lumber	Each	106	12,100
Shredded Wood	Yard	9,733	12,570
Shredded Wood Mulch	Yard	468	3,370
Slag, Steel	Ton	8,600	8,600
Tire Retreading	N/A	N/A	97,773
Toner Cartridges, Remanufactured	Each	4,367	148,787
Total Dollars:	N/A	N/A	\$444,218

Non-Paper Purchase Detail

Purchases of non-paper recycled materials require evaluation and application-development by engineers, architects, and other professionals. This section provides details of some of the ways in which County agencies are addressing the challenges presented by these materials.

- **Aggregate Made with Recycled Concrete** has been used for temporary road surface at the **Cedar Hills Landfill** of the **Solid Waste Division** since 1991. This agency used \$10,000 worth of aggregate in 1999. Using recycled material in place of increasingly scarce and expensive native rock aggregate saves money. For more information, visit the program web-site at: www.metrokc.gov/procure/green/swconag.htm

The specifications used by managers of capital projects typically permit contractors to use recycled materials within specified limits. Since many of the County's contractors obtain materials from suppliers who routinely incorporate recycled concrete to "extend" standard aggregate, it is likely that substantial amounts of recycled material are being used in this way, but the cost of collecting quantitative data is prohibitive.

The contractor that built the King Street Center, an eight-story King County office building, used almost **5,000 tons** of recycled concrete aggregate and **150 yards** of recycled masonry. Much of this material was crushed and reused on-site. For more information about this sustainably built building, please see the press release at <http://splash.metrokc.gov/dnradmin/press/990618kf.htm>.

- **Aggregate – Rubblizing** In 1998, the King County **Roads Division** tested a process in which deteriorated concrete roadways was rehabilitated by crushing the surface into rubble and using it as a base for a new asphalt road surface. This process is about one-fourth the cost of other techniques, because it avoids the expense of landfill disposal and of new aggregate for the roadbed. The Roads Division used this method for a 2,500 linear feet of roadway last year, avoiding disposal of approximately 1,100 cubic yards of concrete and **saving roughly \$90,000**. The ultimate cost of the project was about \$30,000. The program received no new reports of the County using rubblized aggregate in 1999. For more information about this project, visit the program web-site at: www.metrokc.gov/procure/green/rdsasph2.htm
- **Aggregate Composed of 100% Recycled Glass** has been used in projects of the **Solid Waste Division** and **Roads Division** for pipe-bedding and trench backfill in place of virgin rock aggregate. These applications have resulted in cost-savings, but are still considered trial uses, since the availability and quality of recycled glass aggregate is highly variable. The **Roads Division** used approximately **300 cubic yards** of recycled glass as a retaining wall backfill last summer, in an application similar to that of their 1995 project. For more information about these projects, visit the program web-site at: www.metrokc.gov/procure/green/rdsghs2.htm
- **Antifreeze manufactured with re-refined ethylene glycol** has been available under a contract maintained by **Procurement Services Division** since 1991. **Motor Pool, Solid Waste Operations, and the Renton Maintenance Facility** used over **1,600 gallons** of re-refined antifreeze in 1999 and **returned almost 1,000 gallons** of spent antifreeze to the supplier for "closed-loop" re-refining into new antifreeze. This contract also requires that the material be re-refined in a manner that meets all regulatory requirements, thereby avoiding the discharge of a toxic material into local waterways and ensuring compliance with State and Federal regulations.

In February of 1999, the County's **Metro Transit** Division awarded a contract for re-refined concentrated ethylene glycol antifreeze for buses. They introduce the "additive packages" in the maintenance shops. Results have been good and they anticipate annual savings of \$30,000 from using this material. From February to June, 1999, they purchased **7,745 gallons** at a cost of almost **\$15,000**, with savings of almost **\$14,000**.

Total 1999 purchases, including Transit and other County fleets were **9,340 gallons**, at a cost of **\$27,021**. For more information about King County's use of antifreeze, visit the program web-site: www.metrokc.gov/procure/green/antifrz.htm

- **Asphalt** can be economically and effectively recycled and used for many applications. Documentation of King County's use of recycled asphalt is available on the program web-site at www.metrokc.gov/procure/green/rdsasph.htm (Road project) and www.metrokc.gov/procure/green/rjcasph.htm (Regional Justice Center project).
- **Asphalt made with recycled rubber** was used in an “overlay” project by **Roads Division** in early 1998. It had been suggested that using “rubberized asphalt” might reduce traffic noise in this 6.3-mile project. The project included noise measurement on the existing deteriorated concrete pavement, the new pavement with a typical asphalt surface, the surface laid on a “rubblized” base, and 3,600 linear feet (1,804 tons) of “rubberized asphalt.” No significant differences in noise-levels were found between the asphalt surfaces, though all were quieter than the deteriorated concrete surface, with noise reduced by 2.6 to 4.8 decibels. The Division plans to report new measurements in 2000. The cost of the rubberized section was approximately 35% higher than conventional asphalt. For more information about this project, visit the program web-site at: www.metrokc.gov/procure/green/rdsasph2.htm
- **Compost-amended topsoil** is specified by the **Roads Maintenance Section** and by **Roads Engineering Section** in construction projects. The maintenance section purchased over **1,000 yards** at a cost of **\$10,000** during 1999 and the Roads Engineering Section reported that their contractors used approximately **800 cubic yards**, at an installed cost of **\$19,000**. Twenty-one percent of the material used was biosolids compost and seventy-nine percent was yard-waste compost. The Division reports that usage is low this year, as several large projects have been completed. Further information about the use of compost by County agencies is available at the program web-site at www.metrokc.gov/procure/green/compost.htm
- **Energy Efficient computer and office equipment** can be obtained meeting standards set by the ENERGY STAR® program of the Environmental Protection Agency. According to information at the ENERGY STAR® website (www.energystar.gov/) “A typical office can **save approximately 50% of the electricity costs** associated with office equipment by taking advantage of the power management features of ENERGY STAR Office Equipment.” The Environmental Purchasing Program has proposed that ENERGY STAR® requirements be placed in all future contracts and information systems buyers are now evaluating these for future use.
- **Glass – Filtration Sand**
The **Department of Parks and Recreation** began using recycled glass sand in place of conventional filter sand in the pool filters at the **King County Aquatics Center** in Federal Way. **Eighteen tons** of recycled glass was installed in 1998, at a cost of **\$2,320**. The cost is roughly the same as that of virgin material, but it is expected to out-perform the conventional sand and save in replacement costs. Early monitoring data suggest that this material filters more efficiently and produces clearer water. These performance improvements will also save the County money in energy, water, and sewerage costs. If the results continue to be positive, King County Parks plans on using the recycled glass sand in other pools (the department operates 17 pools). For more information, please see the program website: www.metrokc.gov/procure/green/pksglass.htm

- **Glass – Sandblasting Sand**

King County **Solid Waste Division** specified recycled glass as a sandblasting medium for a project at the Factoria Transfer Station. Specification language can be seen at www.metrokc.gov/procure/green/glass.htm and the results obtained in this project will be posted there when they become available. Information on the County's past use of recycled glass as a sandblasting medium at the Renton wastewater treatment plant can be found at www.metrokc.gov/procure/green/triviro.pdf

- **Motor oil made with re-refined base-stock** has been used in County vehicles operated by the **Renton Maintenance Facility**, and **Solid Waste Operations** since 1992. These agencies purchased over **11,000 gallons** of oil at a cost of almost **\$30,000** in the past year.

The Transit Division recently began evaluating re-refined oil. In the second quarter of 1999 they purchased over **4,000 gallons** at a cost of over **\$8,500**. The re-refined **15W40 oil** is being tested in a small sample of buses and early results are promising. Some of the data suggest that re-refined will perform better and last longer than the customary oil, allowing buses to run longer between oil changes. If these trials continue to show good results, the Division plans to expand the use of re-refined motor oil to the entire fleet, making Metro Transit the largest municipal transit fleet in the country to have done so.

Since 1998, fifteen emergency vehicles operated by the **Medic-One** unit of the **Department of Public Health** have obtained warranty-maintenance service from a Ford dealership using re-refined oil.

Combined County purchases totaled **over 15,000 gallons** or **almost \$38,000** in 1999. For more information on re-refined oil, visit the program website: www.metrokc.gov/procure/green/oil.htm

- **Motor oil – return of used motor oil for ‘Closed Loop’ re-refining**

True “closed-loop” re-refining, in which agencies return used oil to the re-refiner from whom oil is purchased, has not been consistently available in our area, but agencies intend to continue participating in closed loop re-refining whenever possible.

- **Paint** products with recycled content have been purchased in limited quantities by County agencies through the years. In 1999, County contractors used recycled paint, as well as low VOC paint, in the new **King Street Center** County office building, and used recycled paint in the newly opened **Vashon Transfer Station**. Users choose paint to meet performance requirements, and, although the County awarded contracts in April that made several varieties of recycled paint available to users, there were no purchases by June. For information about King County's experience with recycled paint, please see the program web-site at www.metrokc.gov/procure/green/paint.htm.

- **Plastic Products:**

Can-Liners

In 1999, King County purchased nearly **4,000 cases** of can-liners at a cost of **over \$50,000**. These were made with 30% high-density polyethylene (HDPE) and 25% low-density polyethylene (LDPE) recycled post-consumer plastic. These bags have been used with good results since 1991. For more information: www.metrokc.gov/procure/green/plasbgs.htm

Plastic Lumber – Equipment Shop

The **Renton Maintenance Facility** of the **Fleet Administration Division** requires new dump trucks to be outfitted with recycled plastic sideboards before delivery. High-quality old growth fir had been customarily used in this application, but it is increasingly scarce and expensive. Since 1996, the Division has been retrofitting all of its trucks with recycled plastic because it is more impact-resistant and needs to be replaced less frequently, saving money in the long-term despite its somewhat higher initial cost. The truck-equipment vendor originally delivered these sideboards only because King County specified them, but now offers them as a standard option for all of its customers because of its superior performance and lower long-term cost. In the past year, the Renton Facility has purchased **12 plastic sideboards**, at a total cost of **\$1,800**. Because replacement frequency has been reduced from two wooden sideboards per week to fewer than one plastic sideboard per month, the Division is **saving \$5,000 per year** in materials costs alone. For more information, visit the program web-site at www.metrokc.gov/procure/green/errlbr.htm

Plastic Lumber – Parks Applications

Parks Division has purchased **plastic lumber** for bench-slat replacement, playground equipment, bollards, and more. For many of these applications, plastic lumber is preferred for its resistance to decay, graffiti and chemical damage. This material results in significant cost-savings when used as a substitute for chemically treated lumber in applications involving contact with soil and water and in other high-maintenance environments.

Since 1997, **Parks Division** has installed playground structures made with recycled plastic, steel, and aluminum. In the past year, five parks received these new playground structures.

In 1998, **Parks Division** purchased **10** recycled plastic picnic tables for a total of **\$4,000**, using a contract maintained by the State of Washington.

The Division also used plastic lumber in 1998 for engraved posts at 17 campground sites and 8 water stations at the **Tolt River Campground** and Parks personnel are testing the plastic to determine how well this material will endure contact with soil and water. Wooden posts in this environment have a 4-5 year replacement schedule and the recycled plastic may greatly reduce replacement costs. For more information about Park's use of recycled-plastic lumber, visit the program web-site at www.metrokc.gov/procure/green/pkslbr.htm

Plastic Lumber – Roads Applications

The **Bridge Unit** of **Roads Division** uses post-industrial recycled plastic “seam-plates” for seismic upgrades to County bridges. In the past year, they have used these on three bridges with plans to use them in future projects.

In 1998, Roads Maintenance section purchased **80 pieces** of recycled plastic lumber for **\$2,800**, for a walkway leading to the beach at the Boeing Creek Bridge. This project was completed for the **Water and Land Resources Division**. Applications in which lumber makes frequent or extended contact with soil and water represent ideal opportunities for the beneficial use of plastic lumber. Unlike costly chemically treated wood, plastic lumber does not require replacement every few years or much maintenance.

Plastic Lumber – Stadium Applications

Stadium Administration Maintenance Section personnel have used recycled plastic lumber to replace wooden 4"x4"x8' "channel boards" to secure the Kingdome artificial turf since 1993. The performance is superior to that of virgin lumber, installation requires less labor, and this method has demonstrated a longer replacement schedule and a lower long-term cost. The use of this material continues to save the County approximately \$5,000 per year on maintenance and replacement costs. The use of recycled plastic lumber for channel boards has also been adopted by other stadia, including the Minneapolis Metrodome and B.C. Place in Vancouver B.C., Canada. The Kingdome has also used recycled plastic for sign-blanks and for "skid pads" for the feet of portable bleachers, both with good results. For more information about this product and application, visit the program web-site at www.metrokc.gov/procure/green/stadlbr.htm

Plastic Lumber – Transit Applications

In 1998, **Transit Division** purchased **14** recycled plastic benches at a cost of **over \$3,500**. These benches are being used in a pilot project on property where the bus routes don't warrant a bus shelter. Transit maintenance personnel expect that maintenance costs will be lower with these new benches. Images of these and other recycled plastic park furnishings can be found at the program web-site at www.metrokc.gov/procure/green/images.htm

- **Remanufactured Toner Cartridges** for laser printers are purchased under a contract developed in collaboration with local vendors and maintained by the Environmental Purchasing Program since 1991. Cartridges supplied under this contract must meet original equipment (OEM) standards and provide full guarantees for performance and equipment damage. In 1997, we updated the contract specifications and added new products to the contract. This contract resulted in even greater savings for the County, which purchased almost **4,500 cartridges**, at a cost of **approximately \$150,000** in the past year. These purchases **saved over \$300,000** in 1999, as the cost of these remanufactured cartridges is approximately one-third the cost of new cartridges. Spent cartridges are remanufactured and all components are recycled when their useful life is over, reducing the landfill disposal of hazardous material. For more information, please visit the program web-site: www.metrokc.gov/procure/green/toncart.htm
- **Steel Mill Slag**
In 1998, the Cedar Hills landfill began using steel-mill slag as temporary road base. This is in addition to using other recycled materials for road base, such as recycled concrete aggregate and hog fuel. By using this material, they are turning a waste material into a beneficial product and saving natural aggregate reserves. The slag material, a by-product of steelmaking, is processed to remove scrap metal. Then it is screened, so that it can be used as an aggregate product. The landfill used **over 8,500 tons**, purchased at \$1 per ton, **saving approximately \$85,000** over the cost of the customary aggregate.
- **Tire Retreading** services worth **nearly \$100,000** were used to retread tires for trucks and other heavy equipment at the **Renton Maintenance Facility, Fleet Division** and the **Cedar Hills Landfill**, of the **Solid Waste Division**. Retreading a tire costs about half as much as buying a new tire. This not only avoided landfill disposal of tires, but also saved the County almost \$100,000 in new tire expense in 1999.

- **Wood-Mulch** made from shredded land-clearing debris is used by the **Solid Waste Division** for temporary road surface at the Cedar Hills Landfill and as landscape mulch in County projects.

The **Cedar Hills landfill** uses this material, as well as recycled concrete aggregate (and now steel slag), to provide stable driving-surfaces, especially during rainy seasons. The landfill purchased almost **10,000 cubic yards** of wood-mulch, at a cost of over **\$12,500** in 1999, saving an estimated \$10,000 by using wood-mulch instead of virgin aggregate. For more information, visit the program web-site at www.metrokc.gov/procure/green/swhog.htm

In 1998, the Roads Division purchased almost **500 yards** of wood-mulch for erosion control. This product was a substitute for a standard bark material and was used at a storm-water detention pond project in the Northeast corner of the County (in Kent). Use of wood-mulch instead of bark **saved an estimated \$2,000**, as the cost of the material is about half that of the customary Fir bark mulch. For more information about the use of recycled wood-mulch, and photographs, visit the program web-site at: www.metrokc.gov/procure/green/wpmulch.htm and cfmmulch.htm

Savings Summary

In 1999, the County **saved approximately \$525,000** by purchasing recycled materials. The table below shows these savings by commodity. More examples of savings can be found in Section III, "Environmental Initiatives of County Agencies" of this report (see page 12).

The Environmental Purchasing Program has helped agencies identify opportunities to purchase environmentally preferable products that not only perform well, but also save money. In some cases, the product simply costs less and in other cases there are savings in installation and maintenance costs. For example: the cost of a remanufactured toner cartridge is about one-third the cost of a new cartridge; wood-mulch costs roughly one-third as much as bark; shredded wood costs less than virgin aggregate; plastic lumber avoids the consumption of virgin timber and reduces maintenance cost; buying concrete aggregate avoids the consumption of virgin aggregate; and it costs half as much to retread a tire as to buy a new one.

Commodity	\$	Savings
Toner cartridges	300,000	Product
Tire Retreading	100,000	Product
Antifreeze	15,000	Product
Shredded wood waste	10,000	Product
Plastic lumber	10,000	Product and maintenance
Shredded wood mulch	2,000	Product
Concrete aggregate	1,000	Product
Steel Slag	85,000	Product
Total Dollars:	\$523,000	

Note that the amounts shown above reflect only the cost of materials and do not include savings in labor costs for installation or maintenance.

III. Environmental Initiatives of County Agencies

The King County Environmental Purchasing Program helps County agencies find ways to use environmentally preferable products and processes in their work. Though environmental responsibility has always been a part of the daily work of County agencies, recent developments in the availability of environmentally preferable materials and processes have provided new opportunities for agencies to improve the environmental impacts of their work. This is a very new area of endeavor for us all, and no one yet knows what will prove to be the most beneficial approaches. This section contains information about the results of several initiatives by which County agencies are saving time, money, and resources.

The categories of work included in this year's report are:

Green Building / Sustainable Design
Energy Efficiency
Waste Reduction

Green Building / Sustainable Design

Sustainable Design – Vashon Transfer/Recycling Station

The Solid Waste Division of the Department of Natural Resources completed construction of a new Waste-Transfer/Recycling station on Vashon Island in May, 1999. The Division hired a subcontractor during the design phase to review project specifications from a sustainability perspective and develop recommendations and new specification language in selected material categories. Following are some of the results:

Recycled content materials used:

- Recycled fill – used as sub base for the road beds
- Concrete – used a minimum of 10% coal-combustion fly-ash
- Ceramic tile - used tiles with 50% post-consumer recycled glass content tiles
- Rubber flooring - used a minimum of 50% recycled content in staff work areas
- Steel - used throughout the project with up to 90% recycled content
- Mineral wool insulation - 75% recycled content.
- Gypsum Wallboard - minimum of 10% recycled content gypsum with 100% recycled paper
- Interior paint - minimum 50% recycled content.

Sustainable products/processes:

- Low-emissivity (low E) glass
- Natural cork tack board
- Formaldehyde-free MDF (Medium Density Fiberboard) cabinet substrate
- Low VOC (Volatile Organic Compounds) form release product
- Landscape berm and sound wall minimize noise pollution
- Shielded light fixtures minimize light pollution

Water quality:

- Leachate will be reduced by covering the Landfill, preventing infiltration of precipitation into the refuse

Community involvement:

- A Community Action Committee participated in the development of the design of this community building.
- The King County Facilities Maintenance Division runs a work release program to learn landscaping and a program for chronic inebriates to learn nursery and greenhouse skills. All the planting and landscaping for the project was provided through this program.

More information is available on the program web-site:

Technical specifications: www.metrokc.gov/procure/green/vashon.htm

Sustainable Materials Specification Review: www.metrokc.gov/procure/green/vashon.pdf

News Release: “*Vashon Transfer/Recycling Station Opens*”

www.metrokc.gov/dnr/swd/VashonPR.htm

Sustainable Construction – King Street Center

The King Street Center, a new 327,000 square foot, eight-story office building, was completed in June of 1999 in the Pioneer Square area of downtown Seattle. The building was constructed for King County by a private developer under a lease-to-own agreement. Several sustainable building elements were incorporated into the design and construction of this building, at the urging of the project managers of the Departments of Construction and Facilities Management and Natural Resources.

Environmental highlights of this project include:

- **Energy-Efficient Lighting:** The lighting system uses less than 0.86 watts per square foot (28% below code levels), occupancy sensors, and dimmers to reduce electricity use by responding to daylight and the number of workers in the offices.
- **Heating, Ventilating and Air Conditioning (HVAC)** units reduce consumption through variable speed drives. Roof-top HVAC air intakes provides 60% outside air filtration, double what is common, for better indoor air quality.
- “**Stacked**” copy rooms, so that copier toners are continually exhausted to the outside, reducing particulates in the building.
- 80% job-site recycling rate, including items such as concrete, soil, wood and steel. Almost 5,000 tons of crushed concrete was used to make temporary roads during construction.
- 32,000 square yards of re-used (renewed) carpet tiles -- **the largest installation of such carpet on the West Coast.**

- On-site water reclamation system collects storm runoff and groundwater and reuses the water for flushing toilets; this system will save an estimated 1.4 million gallons of domestic water annually.
- Elevator lobbies use a variety of recycled-content flooring materials
- Low-VOC (Volatile Organic Compound) materials, such as paints, adhesives, and finishes

An executive press release from the grand opening of this building can be seen at: www.metrokc.gov/exec/news/1999/101299.htm

Sustainability language:

The **Department of Construction and Facilities Management** (DCFM) used the following language in a new contract for design services, in an effort to bring "green" design principles into County construction projects:

King County's General Government Capital Improvement Program (GGCIP) is developing a policy for incorporating principles of sustainability in all phases of County capital projects, including programming, design, construction, operations, maintenance, and disposal. It will be incumbent on the project team awarded this contract to contribute professional expertise on sustainable design in the upcoming renovation/maintenance projects. Each project will offer different opportunities for sustainability, but the GGCIP's goal is to take responsibility for meeting the present demands in the County's built environment without undue compromise of future generations' abilities to meet their needs. Key issues to be considered with this contract are: Environmental Quality (lighting, indoor air quality, acoustics); Energy Conservation (particularly new and existing HVAC); and Resource Efficiency (use of recycled materials and reuse of building components).

Re-used Carpet

The **Department of Construction and Facilities Management**, because of their work on the project to build the new King Street Center (see above) have created a new contract for renewed (refurbished and reused) carpet tiles. Whenever they remodel a County facility, they intend to look first to the use of this product, which will save money and resources.

Energy Efficiency

The County Earns \$1.15 million Energy Credit

A September, 1998 executive press release details the Energy-Saving program of DCFM and the fact that it earned \$1.15 million in credits from Seattle City Light. A copy of the press release can be found at: www.metrokc.gov/exec/news/90198nr1.htm

This credit is in recognition of significant energy saving steps taken by the County as part of a three-year contract, called the King County Tailored Agreement, between the County, the City and Seattle City Light. The agreement calls for the County to purchase and install equipment that results in significant conservation in County facilities. It is estimated that the County is **saving approximately \$18,000 per month** in energy costs.

The County will continue its energy savings program for the duration of the three-year agreement to purchase and install electric energy efficient equipment for facilities located within the Seattle City Light service territory. Modifications that will be applied include replacement of lighting fixtures and controls, heating, ventilating, and air conditioning equipment. The intent is to replace existing inefficient equipment with state-of-the-art efficiency equipment.

Fuel-Cell Project

The Department of Natural Resources Wastewater Treatment Division's Renton plant announced participation in an agreement with the U.S. Environmental Protection Agency in a pilot project in which new fuel-cell technology will be employed to capture energy from methane produced at the plant.

King County presently "scrubs" methane gas to remove carbon dioxide at the East Section Treatment Plant and sells it to Puget Sound Energy. Gas generated at the West Point Treatment Plant is used to produce electricity. However, both processes are less efficient than the fuel cell power plant. The King County project will demonstrate a second generation (molten carbonate) fuel cell that will produce four times the power of first generation (phosphoric acid) fuel cells being tested at wastewater treatment plants in Massachusetts and New York. Gas produced at Renton will be converted into one megawatt of electricity during the two years of operations. Other commercially available fuel cells only produce 250 kilowatts of electricity. Waste heat from the fuel cell can be used for industrial applications or space heating at the Renton plant.

Partners in developing the Molten Carbonate Fuel Cell Demonstration Project for King County are: U.S. Environmental Protection Agency, Washington State University Energy Program, M-C Power Corporation and Puget Sound Energy. The six-year project will cost \$17.7 million dollars, and will be largely funded by federal grants. The first two years of funding have been approved in the federal budget. More information about the King County fuel cell demonstration project and the energy savings expected from this installation can be found at: <http://waterquality.metrokc.gov/awtp/fuelcell/fuelcell.htm>

Energy initiatives – Transit Division

Van Distribution Center – For environmental, as well as financial, reasons, this facility was built completely without an HVAC system, and relies on natural methods of cooling. Among these are strategically placed windows that open to allow improved air circulation and shade trees planted around the building that will (eventually) reduce sunlight entering the windows.

Park-and-Ride Re-lighting Projects – Both the Kent-Des Moines and Mercer Island park-and-rides underwent lighting upgrades in early '99.

Solar-powered Bus Shelters – Trials are underway in which solar panels (and corresponding battery sets) were installed on top of bus shelters to provide lighting at night.

Air Compressor Conversion – This project involved installing a cooling tower for an air compressor that had previously dumped its cooling water straight to the sewer.

1997 retrofit projects of the Transit Division continue to save energy costs. The Transit Division's 20-year plan continues to increase energy efficiency through upgrades to lighting systems that increase lighting levels and decrease costs, upgrades of Heating, Ventilating, and Air Conditioning (HVAC) systems, and insulation projects. The lighting upgrades increased performance and worker satisfaction and lowered maintenance costs.

Waste Reduction

Landfill Bound Re-Usables Diverted

In this innovative program, the **King County Solid Waste Division** and Seattle Goodwill provide a special collection trailer at the First Northeast Transfer Station. Customers can place reusable items in the trailer. Proceeds from the sale of the collected materials are used for Goodwill's education and job training programs. The program began in September, 1998. In the first eight months, more than seven tons of furniture, clothes, toys and other reusable items were recovered.

The County charges the regular disposal fee when people donate reusable items. This helps cover the County's costs of providing this service. Reusable items that can be placed in the Goodwill trailer include household furnishings, working electronic equipment, working small appliances, kitchenware, clothing, recreational equipment, tools, toys, office furnishings, books, videos, music, and craft and hobby supplies.

For more information, visit the King County website at www.metrokc.gov/dnr/swd/1nepr.htm

Tri-County Integrated Pest & Vegetative Management Policy

King, and neighboring Snohomish and Pierce Counties are drafting a policy to provide guidance for pest control and vegetation management by local governments to protect water quality and fish habitat and minimize the release of hazardous chemicals into the environment. This policy will address general procedures and include specific guidelines to address unique details of waterways and buffers, road right-of-ways, developed landscapes, lawns, natural areas, and noxious weeds. For up-to-date information about implementation of this policy, visit the King County website at: www.metrokc.gov/hazwaste/ipm.

IV. Supporting Program Elements

The Environmental Purchasing Program helps agencies develop practical ways to use recycled and other environmentally preferable products and processes, through several program elements, detailed in this section.

Agency Liaison Network

The program uses a network of agency liaisons to provide clients with information on environmentally preferable products and processes and share evaluation results and specifications between agencies. This helps agencies to create new evaluation opportunities and revise contract administration procedures to institutionalize the routine use of these materials.

Internet Information Project

The communications capacity of the Internet is bringing great changes to the way this program delivers information to its clients. This annual report, for example, is being distributed principally through e-mail, with only a few paper copies being produced. The program delivers virtually all of its information to clients through email or the world-wide-web.

World-Wide-Web www.metrokc.gov/procure/green

The King County Environmental Purchasing Program has maintained a web-site **since 1995**, as a resource to participants in the King County program as well as others in the community. Clients visiting this web-site find information on King County's experiences with recycled and environmentally preferable products, specifications, evaluations, contracts, and contact information.

Municipalities and other organizations throughout the nation are beginning to recognize the difference they can make to the environment by purchasing environmentally preferable products. Thanks to the leadership of King County agencies, purchasers are able to use the Internet to find information that will help them understand their opportunities in this confusing new area. **Over 40,000** visitors have visited the Program web-site in the past year. People from all over the world are taking advantage of this site and these contacts are bringing new information that County agencies, suburban cities, and others can use as we all try to develop new applications for recycled and other environmentally preferable products.

In the past year, comments have been left at our web site by visitors from :

The nations of:

Belgium	Egypt	Israel	Nepal
Canada	England	Italy	Saudi Arabia
China	Hong Kong	Jordan	Scotland
Columbia	India	Mexico	Venezuela

The States of:

Iowa	Minnesota	Ohio	And, Washington, DC
Massachusetts	New York	Tennessee	

The Counties of:

Alameda, CA	Los Angeles, CA	Santa Barbara, CA	Washtenaw MI
Clark, WA			

and the Cities of:

Alexandria, VA	Dunkirk, MD	Portland, OR	Solana Beach CA
Ann Arbor, MI	Kansas City, MO	Riverside, CA	Solon, OH
Cherokee, IA	Paducah, Ky	Sacramento, CA	St. Louis, MO
Chicago, IL	Palmdale, CA	San Francisco, CA	Stamford, CT
Denver, CO	Point Richmond, CA		

E-mail Environmental Purchasing Bulletin

www.metrokc.gov/procure/green/bulindex.htm

The Program began producing an “Environmental Purchasing Bulletin” in 1997 to disseminate information about recycled and environmentally preferable products, events, contracts, and other resources. Recipients include participants in the program’s County liaison network, suburban cities, and others across the nation. As of June, 1999, there are over 450 direct recipients of this bulletin. Many of these recipients originate their own list-servs and newsletters and forward the bulletin to many others by those means. An index and the contents of past bulletins can be found on the program web-site.

Examples of 1998/1999 **Bulletin** titles:

- Recycled Plastic Lumber - Structural
- Resources for Environmentally Preferable Procurement
- Resources for Green Building and Sustainability
- 1998 Environmental Purchasing Annual Report
- Environmentally Preferable Cleaners
- Carpet and Carpet Recycling
- Scrap Tires in Civil Engineering Applications
- Resources for Pollution Prevention
- Meadowbrook Pond-City of Seattle
- Remanufactured Office Furniture
- Flooring
- King Street Center

Internet Discussion Groups

We participate in several Internet discussion groups, where we exchange environmental purchasing information with other jurisdictions, many of which now subscribe to our Environmental Purchasing Bulletin. The participants come from across the nation and bring a wide range of experience, which has been shared with County agencies for evaluation.

- **EPPNET** – the Environmentally Preferable Purchasing Network, sponsored by the Northeast Recycling Council (NERC). The Council publicizes the availability of our "Procurement Bulletin" to their network subscribers.
- **Waste Prevention Forum** – a discussion group managed by King County Solid Waste Division, and part of the National Waste Prevention Coalition.
- **Green Building** – a discussion group on green-building topics, sponsored by Oikos (a sustainable and energy-efficient construction resource) and Environmental Building News.
- **IAQ@Onelist.com** – a discussion group on indoor air quality issues.

Public Involvement

The King County Environmental Purchasing Program offers its experience in support of the planning, policy-development, and procurement-education activities of other jurisdictions and organizations.

The program provided technical assistance to, and exchanged information with, suburban cities in King County, as well as state and federal agencies, and other users. In 1998-99, program personnel participated in the meetings, programs and conferences conducted by the following organizations:

- **National Association of Counties (NACo):**
Received the First-Annual Environmental Procurement Award of NACo's Environmental Purchasing Project.
- **National Marketplace for the Environment, Anaheim, CA**
Presented information about King County's Environmental Purchasing Program
- **Northwest Sustainable Building Action Work Group, City of Seattle/King County**
Participated in planning for regional actions in support of green building in 1998. The first phase of planning was completed in late 1998. The sustainable Building Action Plan can be found at: www.ci.seattle.wa.us/seattle/util/rescons/susbuild/plan.htm
- **U.S. Environmental Protection Agency (EPA):**
Participated in an EPA project to develop Waste Reduction Procurement guidelines and technical-assistance documents for municipal governments

- **American Society for Testing and Materials (ASTM):**
Served on Committee D06, Paper and Paper Products
Subcommittee D06.40, developing a standard terminology for recycled paper
- **CDL Council**
Participated in activities of this Council, which was established by the Washington State Recycling Association, Department of Ecology, and King County Solid Waste Division to address issues related to construction, demolition and landclearing debris
- **Environmental Purchasing Initiative – City of Seattle**
Conferred with program personnel to share information about environmental purchasing and assisted in development of an “Environmental Vendor Fair.”
- **Sustainable Building Forum – Solid Waste Division**
The Solid Waste Division hosted a forum at which King County agencies were able to share information about sustainable building. This effort will help agencies to integrate the sustainability message into the County's various technical assistance programs.
- **Regional P2 (Pollution Prevention) Roundtable**
Presented program on Environmental Purchasing Program Implementation
- **Soils for Salmon**
Participated in a day-long workshop attended by over 15 County Engineers and Project Managers, at which the information was presented on the significance of soils to aquatic ecosystems and on opportunities for improvement.
- **State of California**
Addressed state officials on environmental purchasing policy implementation.

Publicity

A key to the success of the King County Environmental Purchasing Program has been the exchange of practical information with other users of these unfamiliar materials. Many of these exchanges have come as a consequence of exposure through national magazines, newspapers, and other publications.

Among the publications which featured the King County Environmental Purchasing Program in 1998/99 were:

Office of the Federal Environmental Executive
Recycling, It's Everybody's Business

Waste Age News: March, 1999
Olympic Trial Site to Use Glass Pool Filter Media

Resource Recycling: February, 1999
Buy recycled update - features web-site

Public Purchaser: January/February, 1999
"Kudos for King County's Green Thumb"

King County Executive Press Release: November, 1998
"King County wins first-ever environmental purchasing award"
www.metrokc.gov/exec/news/111298nr1.htm

National Association of Counties: July, 1998
1998 Environmental Purchasing award

Policy

King County Policy Revision www.metrokc.gov/procure/green/policy.htm

King County revised its Recycled Product Procurement Policy in 1995 to accommodate changes to the procurement guidelines of the United States Environmental Protection Agency, the creation of Federal Executive Order 12873 (revised to 13101), and to reflect the County's five years of experience in policy implementation. The revised policy requires County agencies to purchase "environmentally preferable"* products wherever practicable and expands the commitment of agencies to other environmentally preferable initiatives such as reduction of the use of toxic materials, energy conservation, waste-reduction, and "green-building."

*King County defines "Environmentally preferable" as having a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product.

Model Procurement Policy

Program personnel continued to promote the development of recycled and environmentally preferable procurement policies in suburban cities by providing technical support to the Solid Waste Division's Waste Reduction/Recycling Section. The model was revised in 1997 to broaden the range of environmentally preferable products. Program personnel also provide direct technical assistance to suburban cities for policy implementation, including sharing contracts, specifications, and procurement strategies. According to the Solid Waste Division, twenty-one cities have adopted policies, based on King County's model, since 1992:

Bellevue	Burien	Carnation
Des Moines	Duvall	Enumclaw
Federal Way	Issaquah	Kent
Kirkland	Lake Forest Park	Mercer Island

Normandy Park
Redmond
Snoqualmie

North Bend
Renton
Tukwila

Pacific
SeaTac
Woodinville

Allied King County Programs

Many King County programs provide information and technical assistance to help citizens and businesses find ways to help improve our environment. The Environmental Purchasing Program has collaborated with the following programs for the dissemination of information in 1999:

Construction, Demolition and Landclearing (CDL) Debris Program, Solid Waste Division (www.metrokc.gov/dnr/swd/ResRecy/cdl2.htm): assists County businesses and agencies in management of construction waste and sustainable building. The agency is planning a sustainable building and salmon recovery workshop for Fall, 1999.

Employee Recycling Program, Department of Construction and Facilities Management (www.metrokc.gov/emprec.html): coordinates the in-house recycling program for King County employees and encourages waste reduction. In 1998, this program helped King County employees recycle 1.5 million pounds of paper, increasing collection by 20% over the previous year.

GreenWorks, Business Recycling Program, Solid Waste Division (www.metrokc.gov/dnr/swd/greenwrk/): provides technical assistance to County businesses to enhance waste reduction, recycling and buy-recycled practices and recognizes these businesses for their efforts.

Hazardous Waste Program, Department of Natural Resources (www.metrokc.gov/hazwaste) provides technical assistance on hazardous-waste issues to businesses and citizens, including free waste audits. This group also administers the Envirostars recognition program, to recognize businesses that reduce and/or properly manage hazardous waste. This program has taken the lead on the Tri-County IPM (Integrated Pest Management) policy (www.metrokc.gov/hazwaste/ipm/)

Industrial Materials Exchange (IMEX), Department of Public Health (www.metrokc.gov/hazwaste/imex/): IMEX is a free service designed to match businesses that produce wastes, industrial by-products, or surplus materials with businesses that can use them productively. The program produces a catalogue to encourage waste exchanges, create opportunities for recycling and reduce landfill disposal of surplus materials.

King County Commission for Marketing Recyclable Materials, Dept. of Natural Resources (www.metrokc.gov/market/index.htm): assists County businesses and citizens in marketing and buying recycled products with programs such as "Get in the Loop" and "Shift Gears."

For more information about the King County Environmental Purchasing Program, please visit the program web-site at: www.metrokc.gov/procure/green or contact:

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Seattle, Washington 98104
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